



**Association for
Institutional Research**

Professional File

Number 128, Winter 2012

Association for Institutional Research

Supporting quality data and decisions for higher education.

*Professional Development, Informational
Resources & Networking*

Universitywide Program Review: Evolving a Process for Program Improvement and Institutional Planning

Kristi A. Nelson
University of Cincinnati

Mark C. Nicholas
Oklahoma State University

Abstract

The President of the University of Cincinnati charged the Academic Coordinating Committee (ACC), a universitywide governance body, to conduct a comprehensive review of degree programs by designing a process with multiple outcomes: building an academically stronger university; ensuring consistency with the institution's capacity and academic priorities; engaging individual units in a serious and focused examination of program mission, assessment practices, and plans for the future; and setting the stage for short- and long-term institutional planning. This article illustrates how the ACC envisioned, designed, and implemented the review process. It discusses our approach to developing and using a customized technology solution for program review. We believe that our experience and approach is transferable and can inform practices at other institutions.

Keywords: Program Review, Higher Education, Program Quality, Institutional Planning

Introduction

The president of the University of Cincinnati charged the Academic Coordinating Committee (ACC), a universitywide governance body, to conduct a comprehensive review of all degree programs at the institution: associate, baccalaureate, graduate, and professional. She was especially concerned with what

was perceived to be a proliferation of degrees at all levels, and challenged the committee to design and implement a process for program review that would (a) address the number of degree programs in order to build an academically stronger university, more in keeping with peer and aspirant institutions; (b) ensure that degree programs were consistent with the institution's mission, capacity, and academic priorities; (c) engage individual units in a serious and focused examination of program mission, assessment practices, and plans for the future; (d) assist academic units in setting priorities for achieving excellence; and (e) set the stage for short- and long-term academic planning at the institution.

University Profile

The University of Cincinnati (UC) is a Public, Carnegie-classified Research University with Very High (RU/VH) research activity. It offers a comprehensive set of graduate and undergraduate programs, ranging from music and art to medicine and engineering, in 13 different colleges on its large urban campus. The University enrolls more than 8,000 graduate students and 32,000 undergraduate students. It has a 15 to 1 student/faculty ratio and many ranked programs (<http://www.uc.edu/about/ucfactsheet.html>).

The ACC is a governance body that is chaired by the Senior Vice-Provost for Academic Planning. University administrators, associate deans, Faculty Senate representatives, and two student trustees serve on the committee. The administrators and associate deans are appointed by the Provost; Faculty Senate elects its representatives; and the student trustees serve by virtue of their position as student representatives to the UC Board of Trustees.

Rationale/Purpose

Program review is a common practice among institutions of higher education. A preponderance of evidence suggests that program review has been primarily used as a means for monitoring the quality

and effectiveness of educational programs (Barak & Breier, 1990; English, 1998; Thomas et al., 2000). Some have used the process to create a system of institutional accountability (Barak & Breier, 1990; Pitter, 2007); others have used it to inform decisions about resource allocation and program closure (Michael, 1998).

There is much debate in the literature on the uses and outcomes of program review. Whereas some articles focus on program review as a tool for program assessment and quality (Arns & Poland, 1980), others focus on the theoretical arguments for defining program quality (Bogue, 1998; Green, 1994) and benchmarking performance outcomes (Ferren & Aylesworth, 2001). Carter (2009) pointed out that the published literature on institutional assessment lacked a practice-based approach. We found a need for contemporary discussions on practical approaches that educational institutions develop to conduct program review, and on the corresponding challenges and outcomes that emerge from using such approaches.

A Detailed Discussion of Our Review Process

This article documents the process we developed at the University of Cincinnati to conduct universitywide program review, describes the challenges we faced, demonstrates how technology was used to conduct the review, and explains the decisions we made. It will clarify the rationale for those decisions and share the lessons we learned. We believe that the process we developed and the technology we designed could be adapted by other institutions and that our approach can be added to the inventory of ways to conduct institutionwide program review.

The ACC conducted the review process in a staged manner. Each phase was time-driven with clear objectives and outcomes. These phases are shown in Figure 1 along with the questions we identified as important to address. These phases

Phase I: Establishing the framework for review

- What are the objectives for program review?
- How do we define a program for purposes of the review?
- What specific programs will be reviewed?

Phase II: Moving from principle to practice

- How do we define program quality?
- What specific program data points will help assess our definition of quality?
- How will program data be collected?
- From what institutional sources will program data be drawn?
- How will collaboration between multiple data entities be established and streamlined?
- How can the purpose and process of the review be aligned?

Phase III: Orientation and public relations

- What constituents within the university will be most involved or affected by the program review process?
- How can faculty and administrators be brought on board with the review process?
- How can angst of program closure be allayed?
- What forums would provide maximum reach to create awareness about the purpose and process of the review?
- How will program heads be oriented on the data entry process?

Phase IV: Data collection

- What administrative structures will be used to ensure quality and timely input of program data?
- What are reasonable deadlines for program data entry?
- Who will be responsible for user support and troubleshooting user questions?

Phase V: Review of program data

- Who will review program data?
- What guidelines will be used to review programs?
- What are reasonable deadlines for reviewers?
- Should programs have an opportunity to respond to the initial outcomes of the review?

Phase VI: Implementation and resource alignment

- How will review outcomes be disseminated to college deans?
- What concrete steps should follow program review?
- Should the outcomes of program review be made public?

Figure 1: Questions we asked while planning and conducting program review.

were more layered than might appear and some more complex than others. For example, the ACC spent several months working through Phases I–III to articulate the guidelines for these aspects of the review, whereas, the actual data collection took much less time. Figure 2 documents the timeline for the phases in our review process.

detail that is consistent with review objectives. Second, it should reflect how programs are structured and how they operate across different colleges in a university. Third, the definition must consider how program data like student enrollment, faculty FTE, or retention rates are consolidated at the institutional level. If program review involves

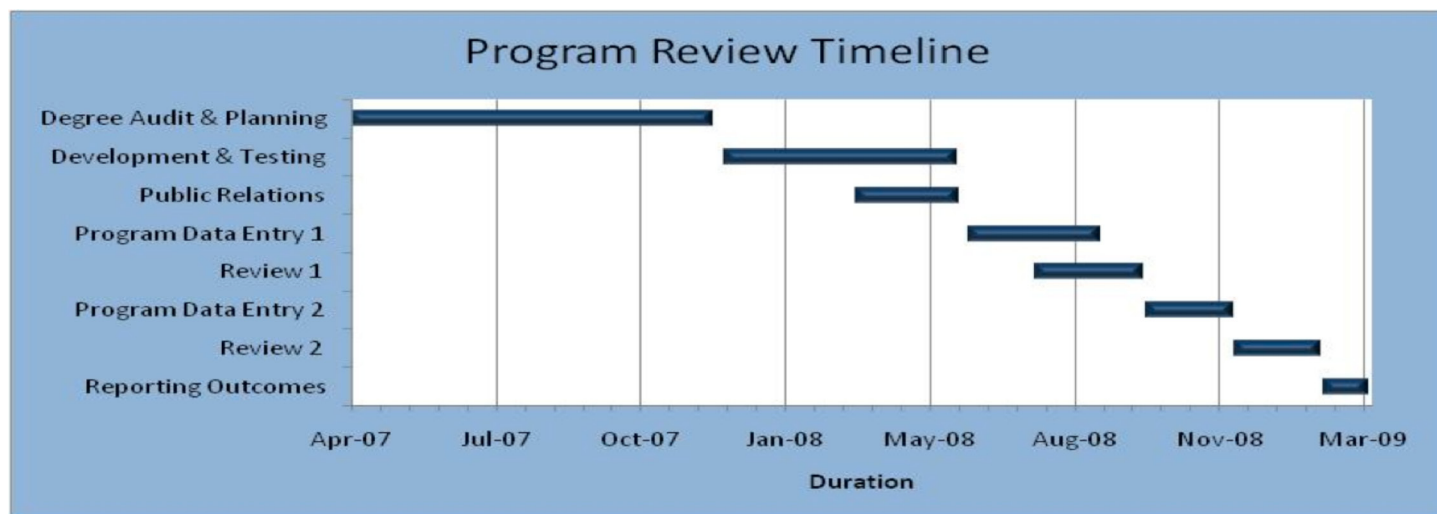


Figure 2. Timeline of the review process.

Phase I – Establishing the Framework for Program Review

Our first task consisted of clarifying review objectives, envisioning a review process, and solidifying a strategic approach to program review. These first steps were critical for the review process to be successful and for it to connect with and influence other institutional priorities.

Defining a “program” for purposes of the review proved challenging. There are myriad ways to define a program including degrees, majors, minors, tracks, concentrations, or certificates. More generally, we found that a program could encompass an entire department housing several such academic entities.

Practically, the definition determines the unit of analysis for the review and, thus, the list of programs to be reviewed. We found that this aspect of the definition has several implications for the process. First, the unit of analysis must provide a level of

financial data, the extent to which these data can be broken down further determines the definition of a program.

To address these issues, we conducted an audit of all degree codes in partnership with College Deans, the Registrar, and our Institutional Research Office. The goal of the audit was to identify duplicate degree programs within and across academic units and to derive a list of programs for review. Through the audit, several inactive program codes were identified and either closed or consolidated. By consolidating or eliminating inactive programs, the e-review process also helped us streamline our submission of the Academic Program (AP) file to the Ohio Board of Regents, Higher Education Information System.

Based on the above analysis, we defined a program as “degree granting” despite the many ways in which “programs” are coded in the student information system. Using this definition, we

determined that the review process would involve 293 degree-granting programs: 159 undergraduate programs and 134 graduate programs. The program audit allowed us to formalize our method for reporting program information to external agencies. By defining the programs to be reviewed, the review process allowed us to consistently and accurately report program information on the Higher Learning Commission's Annual Institutional Data Update.

Our approach was logical and compatible with the university structure but created its own challenges. For instance, from an institutional perspective, this definition excluded certificate programs and minors. Since an objective for program review was to streamline program offerings, the departmental resources expended to operate and sustain certificate programs did not show up on the radar of program review.

Phase II – Moving from Principle to Practice

The program list that emerged through the degree audit provided the structure for Phase II, which involved the following: defining program quality; identifying criteria to assess a program; establishing a means to collect, review, and report program data; and developing workflows and timelines.

Developing criteria to assess a program. The wide disciplinary expertise and representation of faculty and administrators on the ACC facilitated discussion and consensus-building on the broad themes and criteria to be used to assess programs. Scott (1980), Dill (1992), and Michael (1998) held that program quality is difficult to define, as it is an incomprehensible concept. Bogue (1998) questioned, "Is the quality of an educational program...to be found in its reputation or in its results, in rigor of process or in proof of outcome?" (p. 7). We found it helpful to take a comprehensive approach to program quality.

As advocated by Garvin (1988), the ACC selected a multifaceted definition of program quality that

brought together several theories. The first revolved around the articulation of a program's mission and objectives and whether the program was meeting its stated mission within the context of college and university goals (Green, 1994). The second involved identifying internal and external quality assurance mechanisms and establishing how such assessment mechanisms are used for program improvement and strategic planning (Deming, 1986). The third focused on performance or outcomes as it related to students, faculty, and the program as a whole (Guaspari, 1985). The fourth focused on a program's vision and plans for the future and how those plans meshed with the mission of the program.

Establishing criteria to assess program quality. Sub-committees of the ACC researched each of the above quality themes and outlined the nature and parameters of individual criterion that could help assess each quality theme. The ACC, as a whole, refined each criterion and worked together to articulate its understanding of each criterion so that it would be accurately understood and interpreted during the data entry and review stages. These criteria are discussed in detail later in the article.

Given the size of the institution and the diversity of program offerings, we found it important to ensure that the review criteria covered a wide array of program data so that each college had a fair chance to showcase its programs. At the same time, it was important for program data to provide reviewers with sufficient evidence to distinguish among strong and weak programs and reveal areas for improvement. Consistent with counsel from Ferren and Aylesworth (2001), we sought a combination of both quantitative and qualitative data, including the areas that follow.

Mission and objectives. To assess quality in this category, each program articulated its mission and objectives and identified distinctive features that the program employed to achieve its mission and objectives. The ACC identified a list of program features (see Figure 3) like service learning, study

Program Features

☐ Internship
☐ Clinical Placement
☐ Co-op international
☐ Co-op domestic
☐ Performance
☐ Exhibitions / Creative Work
☐ Undergraduate Research
☐ Laboratory / Studio
☐ Other Experiential Learning

☐ Domestic cultural competence
☐ Global cultural competence
☐ Study Abroad
☐ Service Learning domestic

☐ Service Learning international
☐ Problem- or case-based instruction
☐ Instructional Technology

☐ Distance Learning
☐ Library Research Component
☐ Significant student writing (at least a four page paper)
☐ Student presentations (in-class)
☐ Student presentations (out of class including professional meetings)
☐ Corporate collaborative
☐ Interdisciplinary connections or perspective
☐ Students are members of professional organization
☐ Other

Figure 3. Program features prompts in e-review.

abroad, internships, or the use of instructional technology, and units could use the list or add to it features that were unique to the program. Each program was required to highlight how it achieved its mission and how the mission aligned with the institution's academic plan and position as an urban research university.

Internal and external program assessment.

Program quality assurance has been traditionally ensured through the use of both external and internal assessment measures like accreditation and peer review (Arns & Poland, 1980). The ACC decided to use the results of internal and external assessments to evaluate programs. Programs were requested to provide documentation on the outcomes and recommendations of accrediting agencies together with evidence of the program's response to those recommendations. Programs presented data on accreditation cycles so that reviewers would be aware of whether a program had recently undergone an accreditation visit or whether a visit was forthcoming. Graduate programs provided the most recent "closure" letter from the institution's graduate review process; these letters summarized the findings of the review

process and outlined steps for improvement to be addressed prior to a future review.

Since all programs do not have specialized accreditation, the ACC requested data on internal assessment mechanisms. Similarly, those programs that had undergone review by internal or external peers attached the outcomes and recommendations of such reviews and responses by the program.

The ACC developed a comprehensive list of assessment practices used within the university to maintain program quality (see Figure 4). Programs could use the list as a base to indicate which practices formed part of their assessment methods or add assessment practices that were not listed or were unique to a program. In addition, the ACC sought evidence-based explanations on how assessment practices informed current operations and future plans for the program.

Performance outcomes. The use of program performance results for program review is not without controversy. While some like Bogue (1998) have held that performance assessments and evidence are required to make a fair judgment of program quality, others like Arns and Poland (1980)

Assessment Practices

☐ Standardized test
☐ Portfolio assessment
☐ e-portfolio assessment
☐ Pre- / post testing
☐ Focus groups
☐ Professional certification
By Whom: Pass Rates: National Avg:
By Whom: Pass Rates: National Avg:

☐ General Education assessment
☐ Skill proficiency testing
☐ Internal Review
☐ External Review
☐ Other

Briefly indicate how the assessment data that you collect is used to make program improvements:

Figure 4. Assessment practices prompts in e-review.

questioned whether outcomes like a program's contribution to knowledge or skill creation, creativity, or to a society or community can be quantified. However, they asserted it is possible to find "quantifiable surrogates" (1980, p. 271) for performance outcomes.

To assess performance outcomes, the ACC sought a combination of both quantitative and qualitative data in three categories—student, faculty, and institutional outcomes. With regard to student outcomes, quantitative data like enrollment history, graduation rates, and retention rates for the last five years were extracted from records in the office of institutional research (see Figure 5). Program heads supplied information about the demographics of students to which the program caters and employment rates of students upon graduation or any time period after graduation (depending on how the college collected data). Undergraduate programs were asked to indicate how the program prepared students for graduate school.

For faculty outcomes, the ACC requested data on the ability of a program to attract and retain the best faculty in the market. Quantitative data like

faculty full-time equivalency was extracted from institutional research records. Programs described the volume of faculty research and grants and the involvement of students in research activities.

The third performance category related to the institutional competitiveness of the program. Programs provided evidence-based data of rankings by the *U.S. News & World Report* and ratings by other organizations. Where applicable, programs provided the results of student performance on professional and licensure tests and comparisons with national averages on such tests.

We decided to use performance results to frame the discussion on program performance rather than to define it. For instance, we found that our program offerings are built around disciplines rather than function. Some programs transcend disciplinary boundaries and serve students outside their discipline, department, or college structure. As a result, such programs are likely to show low enrollment numbers in the major but have high faculty utilization because of the large number of students served. Therefore, we also sought qualitative data that addressed service, collaboration, and partnerships that

	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007
Enrollment Headcount					
Instructional FTE					
First Year Retention Rates					
Graduation Rates					

Comments:

Figure 5. Institutional research data interface in *e-review*.

programs had built within the university, with other universities, and in the community. Our discussion on developing review criteria took into account programs that serve to diversify the university's portfolio.

Future plans and vision. Each program was asked to list at least three strategic action steps that would propel the program toward excellence. Programs were required to provide explanations on the linkages between future plans and program mission and vision.

Establishing the means to collect program data. After evaluating the traditional means used to collect program data, we determined that paper or email options would be cumbersome, require excessive print and paper resources, and make the process of consolidating and reporting review outcomes tedious. More recently, some universities have used electronic options like e-portfolios to collect program data. While e-portfolios work well for the collection of program data and may be good repositories of program data, it would be difficult to query, track, and extract meaningful reports from the data. This limits the potential of the enormous effort and resources that universities expend in conducting program review. Buying a commercial product was an option but we felt it would hamper the flexibility of our approach and be restrictive on the customization of information for reporting purposes. In addition, commercial products would

place restrictions on the nature, type, and source of institutional data that we could bring into the program review process.

We determined that a customized, web-enabled, database management system tailored for program review would best fit our needs to streamline the data collection and review process across the university and allow for intelligent querying, tracking, and reporting. The system was named *e-review*. The ACC wanted *e-review* to be user-friendly, secure, and compatible with existing university systems. A key aspect in developing customized software is selecting a database system and development platform. We wanted a robust, relational database management system (RDBMS) and a development platform that was compatible with other university systems with which *e-review* had to interface. We needed to easily find personnel with programming expertise in the platform we selected.

Based on these considerations, *e-review* was designed and developed as a relational database management system with a web-enabled front end. We used ColdFusion 8® to develop the application layer, or front-end, and Microsoft SQL 2008® for the database back-end. Development was done within the Fusebox 5.0® framework. The Provost Office allocated \$25,000 to hire a program developer and provided the resources to hire a graduate assistant for two years (including summers) at \$20,000 per

year. Both individuals had expertise in program design and technology and worked closely with the ACC to design, develop and implement the technology solution called *e-review*.

e-review comprised three front-end modules—a data entry module, a reviewer module, and a reports module. Because our review process was internally driven and reviewers were part of the university structure, system security was very important. To address system security, we made *e-review* available only on the University's intranet; built access to *e-review* around the established university network authentication system; and protected reviewer identity. We created a hierarchy of three user groups—administrators, reviewers, and program data entry users—that received access to specific system functions and data types.

We built interfaces between *e-review* and other existing university systems to upload and hand off program data during and after the review. This was accomplished through collaboration among the Provost Office, Registrar, and Institutional Research. With an eye to the future, it was also vital to keep the database structure scalable so that *e-review* could be expanded with future enhancements.

Establishing workflows and timelines. As a process, the ACC used existing administrative structures and hierarchies for communication and reporting channels. When conducting a project of this scale, we found it helpful to plan for contingencies and delays and to be flexible with deadlines as some colleges or programs may be involved with other parallel and time-sensitive activities. An analysis of Figure 2 reveals that we spent a considerable amount of time on planning, development, and testing. Our experience revealed that good planning is crucial to executing a smooth and effective process and is a guarantee to successful program review.

Phase III – Orientation and Public Relations

In Phase III, we presented the review purpose and process to the university community. Arns

and Poland (1980) pointed out that perceptions and motivation play a large role in the success of program review. One of the challenging public relations hurdles we encountered related to a perceived link between program review and program closure.

Through presentations to administrator and faculty groups on campus, we sought to gain cooperation from those in leadership positions at the colleges (Bogue, 1998), gauge initial reactions to *e-review* as a system, and involve faculty by requesting feedback on the template (Kleniewski, 2003). We used these efforts to allay fears of program closure by having senior administrators clarify that the program review process was not about program closure. Our public relations efforts made positive connections between the review purpose and process. We identified opportunities for linkages of program review efforts with other college and university priorities, including the preparation of the HLC/NCA Self Study and on-site visit, collegiate restructuring, and the conversion from a quarter to semester calendar.

Phase IV – Data Collection

We launched the data collection phase in two stages, beginning with graduate and professional degree programs followed by undergraduate programs. We incorporated several user-friendly features into *e-review* such as using a combination of text fields and check boxes to aid fast data entry. Wherever possible, *e-review* provided for the upload of evidence or documents, which limited the need for users to enter copious amounts of data that already existed electronically. Users could cut and paste information from other Microsoft Office® products into *e-review*. Data filters helped users easily query and sort programs.

The interfaces built between *e-review* and existing data sources in the university allowed for institutional data to be pre-populated into each program template. This minimized the need for user input and ensured the accuracy of data.

Because *e-review* was available on the university intranet and allowed for off- and on-campus user access, a help system provided detailed instructions for users to login and use the program. This established a common user experience across the university.

At any stage during data entry, users could click a button to save data incrementally or generate a printable, formatted .pdf document with the latest data entered in the system. Program data were deemed ready for review after college deans indicated it was internally consistent and ready for evaluation. This was accomplished with the click of a button. Faculty uncomfortable with using the web-based technology presented a challenge. Thus, the technology team became a helpdesk and responded promptly to user queries or requests for support to create a positive user experience. A screen shot of the data entry screen can be found at <http://uc.edu/provost/ereview>

Phase V – Review of Program Data

We conducted the actual review in two stages. We decided that members of the ACC would review program data as they represented a good blend of disciplinary expertise, diversity, campus representation, and they best understood the intended outcomes of the review process. In addition, we anticipated that an institutional profile

would become clearer if a collaborative body was involved in conducting the review.

In order to establish broad reliability of outcomes among reviewers, each ACC member individually reviewed three sample programs and made (a) a determination as to the completeness of the response relative to the template; and (b) a judgment on the information submitted as to where a program was relative to quality. The committee then met as a whole and discussed the ratings of reviewers (satisfactory, unsatisfactory, or needs more information) and debated justification for their assessment of the programs. This helped us recognize the range of reviewer responses and work collaboratively with the entire committee to develop consensus among reviewers on evaluating program data.

In the first stage all 293 programs were reviewed. ACC members divided into teams taking into account disciplinary expertise and conflict of interest. First, each member on a team reviewed and rated a program individually and then collaborated with members on their team before deciding on the rating of the program. The reviewer interface of *e-review* was designed for multiple reviewers to view the same program data set (see Figures 6 and 7). Reviewers could review program data individually and then collaboratively assess a program.

College	Program Review Category	Degree Level	Submitted	Last Updated	Review Indicator	Review Status
CECH	Counselor Educ	18EDD	06/06/2008	12/04/2008	Satisfactory	Complete
CECH	Literacy	18EDD	06/05/2008	01/21/2009	Satisfactory	Complete
CECH	Literacy	18MED	06/06/2008	06/06/2008	Satisfactory	Complete
CECH	School Counseling	18MED	06/06/2008	12/05/2008	Satisfactory	Complete

Figure 6. Part of the reviewer summary screen.

Review Committee	
Review Conclusion	
Comment Log:	
First review: The information provided in the e-Review and the Roadmap document (enclosed) do not seem to be well aligned. The majority of the responses provided are unclear or less than adequate. Does the doctoral program have an account of student learning outcomes and strategic plan document.	Review Indicator: First Review: Unsatisfactory Second Review: Satisfactory
Second review: Thank you for the extensive additional response material. The assessment materials are very comprehensive. It remains very difficult to distinguish the masters program from the doctoral program.	
This program was resubmitted for 2008 review on 12/22/2008	
Print (PDF)	

Figure 7. Sample reviewer comments in e-review.

In particular, ACC reviewers expected each program to provide a concise and honest appraisal of its strengths and weaknesses, and its plans to improve. The degree to which this was present in each unit's submission affected how the ACC rated the program. For instance, it was important to not see the program mission as an isolated unit, but to analyze it within the context of its relationship to student and faculty outcomes, and to evaluate how future plans for the program were in keeping with the spirit of the program mission. ACC reviewers looked for an action plan linked to a program's overarching mission that would help increase stature or improve competitiveness. The use of both quantitative (e.g., retention and time-to-degree percentages) and qualitative data (e.g., rankings, external reviews, accreditation reports) provided reviewers with information that could be used to understand a program's current status, its health, and its potential for moving forward and achieving excellence.

Each review team presented its findings to the ACC as a whole, which then collaboratively discussed and deliberated on problematic program data. This helped reviewers examine the health of individual programs and at the same time

acquire a holistic understanding of the university's program offerings in order to evaluate the congruity of program offerings within a department and across colleges at the university. In the first stage, programs were assessed into three categories based on these considerations:

- *Satisfactory* – Program ranges from good to high in quality. Program has potential to enhance standing of university. Program is doing reasonably well with viable plans for moving forward. Program demonstrates through its action plan a strategic agenda for achieving excellence.
- *Needs more information* – Data provided by the department heads in e-review are not complete. Program needs to furnish missing data. Program is new or developing. Appears to duplicate other existing programs.
- *Unsatisfactory* – Program has significant problems or critical issues in terms of structure, mission, or internal or external assessment outcomes. Program has critical issues moving forward and there is no clear plan for how it will achieve excellence.

In an effort to be fair in its assessment, the ACC requested all programs marked with *unsatisfactory* or *needs more information* to revisit the program data template and respond to reviewer comments/concerns or provide additional evidence for clarification. The ACC identified model programs in each college that had provided evidence-based and complete responses in the template. Programs that were identified as *unsatisfactory* or *needing more information* were requested to review submissions from model programs before undertaking data entry for the second time.

Interestingly, during this stage, colleges themselves recommended programs for closure. Their decision was based on factors like low enrollment, lack of potential for achieving excellence, and low market demand. Any resources that were saved were reallocated within the college to stronger and more competitive programs; faculty were reassigned within the college. It must be noted that the closures were not recommended by

the ACC as the reviewing body. The process of self evaluation by the program units led to the closures.

Therefore, in the second round of review we used the following review categorizations: *satisfactory*, *unsatisfactory*, and *college recommends for closure*. Each college received a report generated in *e-review* with a summary of the review outcomes. In addition, users could log in to *e-review* and view a detailed analysis of the program by reviewers. The universitywide outcomes of program review are depicted in Figure 8.

Discussion

Customized Approach

We believe that one of our best decisions was to embrace a customized approach to program review. The processes we developed to collect, review, and make changes to the portfolio of programs were grounded in the university's unique culture,

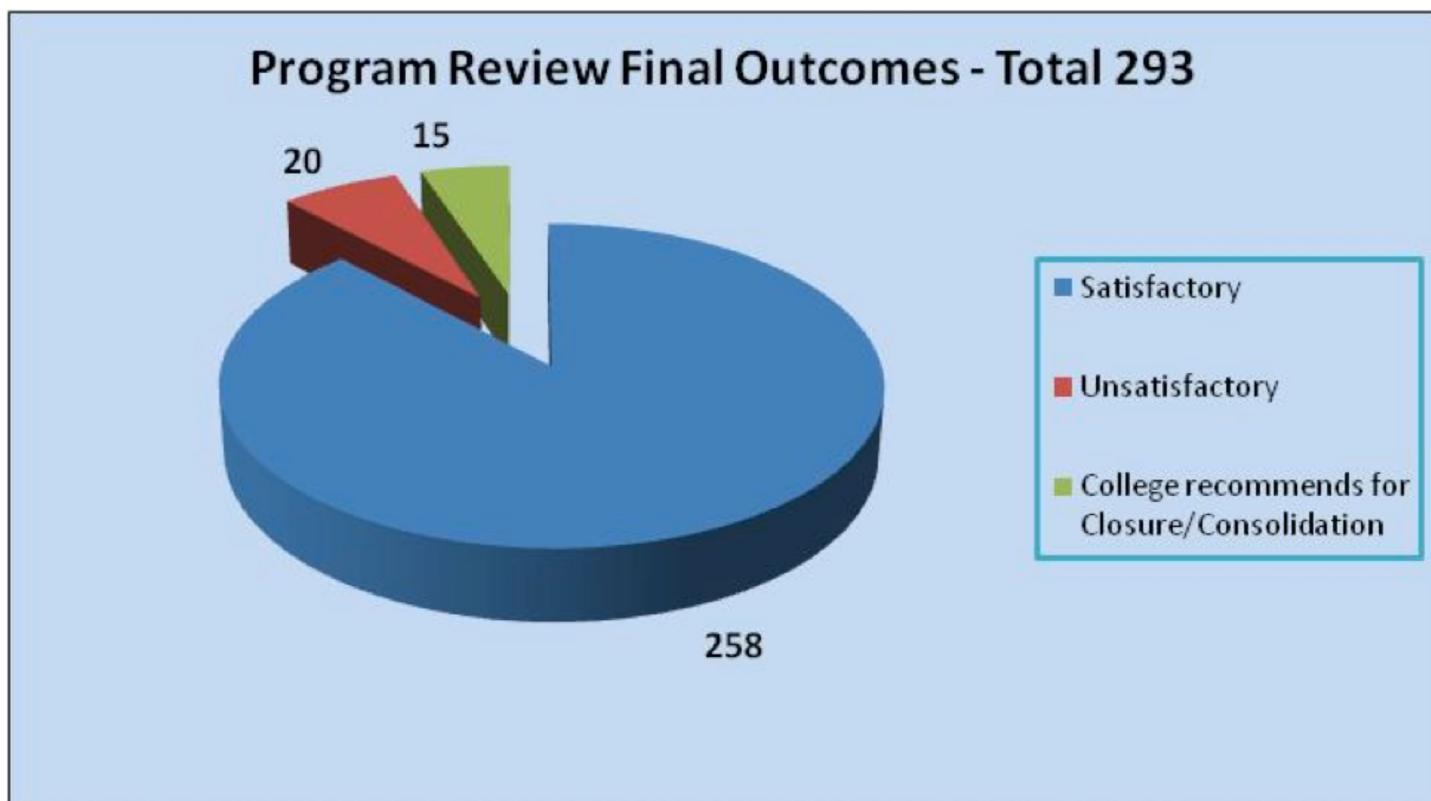


Figure 8. Summary of final outcomes of program review.

local operations, and organizational structures. The ACC's use of existing administrative and reporting structures within the university as communication channels ensured that the process was taken seriously and provided for accountability at various levels.

Technology-driven Approach

Using customized technology provided enormous flexibility and yielded multiple dividends. Because of its usability and convenience, *e-review* leveraged the data entry and review processes. It facilitated a smooth flow of information among the various partners, reduced the need for copious paperwork, and eliminated printing costs. Tracking and reporting features of *e-review* allowed the ACC to efficiently monitor and oversee the entire review process. Institutionally, *e-review* has become a one-stop, electronic snapshot of the university's degree offerings. We have found that well-coded program data are essential for intelligent reporting and they are informing our short- and long-term institutional planning.

The ACC decided to henceforth conduct universitywide program review in 5–6-year cycles. Because *e-review* is scalable, we can easily enhance or expand the system in the future with new features. It will serve as the foundation for future program review cycles at the university, and for the development and enhancement of program-specific assessment plans.

Fair and Comprehensive Approach

Our experience reaffirmed Barak and Breier's (1990) findings that fairness, objectivity, comprehensiveness, and credibility are key principles for successful program review. For us, a comprehensive approach meant building criteria that showcased the university's diverse portfolio of programs. It meant the reviewers would see each program holistically and evaluate the congruity of program offerings within a department, college,

and the university. The diversity of representation and disciplinary expertise represented on the reviewing body facilitated the development of thoughtful criteria for evaluation. At the same time, it created opportunities for healthy differences in opinion. Our consensus-based approach to evaluating programs along with the criteria-based nature of the program data template provided for an objective framework for the review process.

Collaborative Approach

Our approach brought together faculty and administrators in deliberate and meaningful collaboration at various stages of the review process. They collectively developed the criteria used to assess program quality. We observed positive levels of collaboration during the data entry and review phases. The handoff of program data from data entry users to reviewers and vice versa was achieved seamlessly with the click of a button. Through the outreach and public relations efforts of ACC members, faculty came to appreciate the importance of the review process and seized the opportunity to showcase their programs at the university level. All these factors helped alleviate what Arns and Poland (1980) described as "snags" (p. 274) that can occur in conducting program review when faculty and administrators come together clumsily.

Immediate, Windfall, and Institutional Outcomes

We found it helpful to classify outcomes of program review into three categories: immediate, windfall, and institutional. We used the results of program review to make immediate recommendations to the Provost about program consolidations, closures, and realignments. Thanks to the design of the review itself, academic units were asked to align academic mission and strategic priorities resulting in an accurate and timely catalogue of degree program offerings. The data we collected were also used to realign budgetary

resources within a performance-based budgeting model implemented since the 2010 fiscal year.

The versatility of program data that are stored electronically means that data can be easily tracked or spun into customized reports long after the review process is completed. As a result, we continue to reap windfall benefits from program review. Consider that when the Office for Assessment and Student Learning needed data on programs across the university that offered service learning or programs that were professionally certified, those data were made available at the click of a button as a report. The review outcomes are being used to inform decisions on the development of the university's library collection.

We found it valuable to align the purpose of program review with other institutional endeavors (Barak & Mets, 1995). The results of the review provided the framework for the three large institutional initiatives mentioned previously: the self study and on-site visit of the HLC/NCA, the ACC's involvement in a universitywide college restructuring endeavor to combine and synergize program offerings for greater efficiency, and the process of migrating from the quarter to semester academic calendar. This alignment served to place the review process in perspective, generated motivation among faculty, and made the data collection and review process meaningful beyond its immediate scope.

Program Closure/Public Relations

Whether intended or not, program review creates angst of program closure. Programs generally respond to such fears by posturing defensively or withholding important data. We found it helpful to make public relations attempts to squelch such fears early in the process. The use of generic review outcome classifications like *satisfactory*, *unsatisfactory*, and *needs more information* in the first stage of the review allayed fears and clarified that the review process was not about program closure. We found it a good practice

to give programs an opportunity to respond to reviewer comments or provide additional evidence to clarify concerns. Decisions on the health of a program were made only after programs had responded to initial concerns raised by the reviewers. This iterative process is powerful in itself, and the programs that were closed after the review were recommended for closure by the colleges themselves.

Our approach to program review broadly involved evaluating academic strength, internal and external assessment mechanisms, and performance outcomes as indicators of program strength. Conspicuously missing were cost and revenue data and criteria. It is difficult to access cost and revenue data at the program level in our financial system because university budgets operate on a departmental basis, and the blurred lines between a program's structure and function make cost-based criteria difficult to assess. Certainly, this was a limitation of our process, but accessing these data remains a goal with the implementation of our performance-based budgeting model and will be added as an interface to *e-review* in future program review cycles.

Conclusion

As the demands for accountability in higher education increase from multiple stakeholders, we believe that our approach to program review, and the system we developed, aids in the assessment of program quality and facilitates long- and short-term institutional planning. The process and means that we developed can be adopted by other institutions investigating ways to develop practical and useful approaches to program review at the level of the university. Our process was highly respected at UC since it was viewed as inclusive and fair, and the results were used extensively for regional accreditation by NCA/HLC, for semester conversion, and for performance-based budgeting. It has served as a vehicle for internal planning and external reporting.

References

- Arns, R. G., & Poland, W. (1980). Changing the university through program review. *The Journal of Higher Education*, 51, 268–284.
- Barak, R., & Breier, B. E. (1990). *Successful program review*. San Francisco: Jossey-Bass Inc.
- Barak, R., & Mets, L. (1995) *Using academic program review*. San Francisco: Jossey-Bass Inc.
- Bogue, G. (1998). Quality assurance in higher education: The evolution of systems and design ideals. *New Directions for Institutional Research*, 25, 7–18.
- Carter, S. (2009). A ten-step process for creating outcomes assessment measures for an undergraduate management program: A faculty-driven process. *AIR Professional Files*, 113. Retrieved from <http://www3.airweb.org/page.asp?page=73&appage=85&id=118>
- Deming, W. (1986). *Out of the crisis*. Cambridge, MA: MIT Press.
- Dill, D. D. (1992). Quality by design: Toward a framework for academic quality management. In J. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 8, pp. 37–88). New York: Agathon Press.
- English, S. L. (1998). Internationalization through the lens of evaluation. In J. A. Mestenhauser, & B. J. Ellingboe, (Eds.), *Reforming the higher education curriculum* (pp. 179–193). Phoenix, AZ: Ornyx Press.
- Ferren, A. S., & Aylesworth, M. S. (2001). Using qualitative and quantitative information in academic decision making. *New Directions for Institutional Research*, 112, 67–83
- Garvin, D. (1988). *Managing quality*. New York: Free Press.
- Green, D. (1994). *What is quality in higher education?* London: The Society for Research into Higher Education/Open University Press.
- Guaspari, J. (1985). *I know when I see it: A modern fable about quality*. New York: AMACOM.
- Kleniewski, N. (2003). *Program review as a win-win opportunity: Communication and planning are essential for a positive outcome*. Retrieved from <http://www.aahea.org/aahea/articles/win-win.htm>
- Michael, S. O. (1998). Restructuring U.S. higher education: Analyzing models for academic program review and discontinuation. *The Review of Higher Education*, 21, 377–404.
- Pitter, G. W. (2007). Program review: A tool for continuous improvement of academic programs. *AIR Professional Files*, 105. Retrieved from <http://www3.airweb.org/page.asp?page=73&appage=85&id=109>
- Scott, R. A. (1980). Quality: Program review's missing link. *College Board Review*, 118, 18–21.
- Thomas, B., Rajacich, D., Al Ma'aitah, R., Cameron, S., Gharaibeh, M., & Delahunt, T. (2000). Developing a program-review process for a baccalaureate nursing program in Jordan. *International Nursing Review*, 47, 243–247.



**Association for
Institutional Research**

The AIR Professional File—1978-2012

A list of titles for the issues printed to date follows. Most issues are “out of print,” but are available as a PDF through the AIR Web site at <http://www.airweb.org/publications.html>. Please do not contact the editor for reprints of previously published Professional File issues.

Organizing for Institutional Research (J.W. Ridge; 6 pp; No. 1)
 Dealing with Information Systems: The Institutional Researcher's Problems and Prospects (L.E. Saunders; 4 pp; No. 2)
 Formula Budgeting and the Financing of Public Higher Education: Panacea or Nemesis for the 1980s? (F.M. Gross; 6 pp; No. 3)
 Methodology and Limitations of Ohio Enrollment Projections (G.A. Kraetsch; 8 pp; No. 4)
 Conducting Data Exchange Programs (A.M. Bloom & J.A. Montgomery; 4 pp; No. 5)
 Choosing a Computer Language for Institutional Research (D. Strenglein; 4 pp; No. 6)
 Cost Studies in Higher Education (S.R. Hample; 4 pp; No. 7)
 Institutional Research and External Agency Reporting Responsibility (G. Davis; 4 pp; No. 8)
 Coping with Curricular Change in Academe (G.S. Melchiori; 4 pp; No. 9)
 Computing and Office Automation—Changing Variables (E.M. Staman; 6 pp; No. 10)
 Resource Allocation in U.K. Universities (B.J.R. Taylor; 8 pp; No. 11)
 Career Development in Institutional Research (M.D. Johnson; 5 pp; No. 12)
 The Institutional Research Director: Professional Development and Career Path (W.P. Fenstemacher; 6pp; No. 13)
 A Methodological Approach to Selective Cutbacks (C.A. Belanger & L. Tremblay; 7 pp; No. 14)
 Effective Use of Models in the Decision Process: Theory Grounded in Three Case Studies (M. Mayo & R.E. Kallio; 8 pp; No. 15)
 Triage and the Art of Institutional Research (D.M. Norris; 6 pp; No. 16)
 The Use of Computational Diagrams and Nomograms in Higher Education (R.K. Brandenburg & W.A. Simpson; 8 pp; No. 17)
 Decision Support Systems for Academic Administration (L.J. Moore & A.G. Greenwood; 9 pp; No. 18)
 The Cost Basis for Resource Allocation for Sandwich Courses (B.J.R. Taylor; 7 pp; No. 19)
 Assessing Faculty Salary Equity (C.A. Allard; 7 pp; No. 20)
 Effective Writing: Go Tell It on the Mountain (C.W. Ruggiero, C.F. Elton, C.J. Mullins & J.G. Smoot; 7 pp; No. 21)
 Preparing for Self-Study (F.C. Johnson & M.E. Christal; 7 pp; No. 22)
 Concepts of Cost and Cost Analysis for Higher Education (P.T. Brinkman & R.H. Allen; 8 pp; No. 23)
 The Calculation and Presentation of Management Information from Comparative Budget Analysis (B.J.R. Taylor; 10 pp; No. 24)
 The Anatomy of an Academic Program Review (R.L. Harpel; 6 pp; No. 25)
 The Role of Program Review in Strategic Planning (R.J. Barak; 7 pp; No. 26)

The Adult Learner: Four Aspects (Ed. J.A. Lucas; 7 pp; No. 27)
 Building a Student Flow Model (W.A. Simpson; 7 pp; No. 28)
 Evaluating Remedial Education Programs (T.H. Bers; 8 pp; No. 29)
 Developing a Faculty Information System at Carnegie Mellon University (D.L. Gibson & C. Golden; 7 pp; No. 30)
 Designing an Information Center: An Analysis of Markets and Delivery Systems (R. Matross; 7 pp; No. 31)
 Linking Learning Style Theory with Retention Research: The TRAILS Project (D.H. Kalsbeek; 7 pp; No. 32)
 Data Integrity: Why Aren't the Data Accurate? (F.J. Gose; 7 pp; No. 33)
 Electronic Mail and Networks: New Tools for Institutional Research and University Planning (D.A. Updegrove, J.A. Muffo & J.A. Dunn, Jr.; 7pp; No. 34)
 Case Studies as a Supplement to Quantitative Research: Evaluation of an Intervention Program for High Risk Students (M. Peglow-Hoch & R.D. Walleri; 8 pp; No. 35)
 Interpreting and Presenting Data to Management (C.A. Clagett; 5 pp; No. 36)
 The Role of Institutional Research in Implementing Institutional Effectiveness or Outcomes Assessment (J.O. Nichols; 6 pp; No. 37)
 Phenomenological Interviewing in the Conduct of Institutional Research: An Argument and an Illustration (L.C. Attinasi, Jr.; 8 pp; No. 38)
 Beginning to Understand Why Older Students Drop Out of College (C. Farabaugh-Dorkins; 12 pp; No. 39)
 A Responsive High School Feedback System (P.B. Duby; 8 pp; No. 40)
 Listening to Your Alumni: One Way to Assess Academic Outcomes (J. Pettit; 12 pp; No. 41)
 Accountability in Continuing Education Measuring Noncredit Student Outcomes (C.A. Clagett & D.D. McConochie; 6 pp; No. 42)
 Focus Group Interviews: Applications for Institutional Research (D.L. Brodigan; 6 pp; No. 43)
 An Interactive Model for Studying Student Retention (R.H. Glover & J. Wilcox; 12 pp; No. 44)
 Increasing Admitted Student Yield Using a Political Targeting Model and Discriminant Analysis: An Institutional Research Admissions Partnership (R.F. Urban; 6 pp; No. 45)
 Using Total Quality to Better Manage an Institutional Research Office (M.A. Heverly; 6 pp; No. 46)
 Critique of a Method For Surveying Employers (T. Banta, R.H. Phillippi & W. Lyons; 8 pp; No. 47)
 Plan-Do-Check-Act and the Management of Institutional Research (G.W. McLaughlin & J.K. Snyder; 10 pp; No. 48)
 Strategic Planning and Organizational Change: Implications for Institutional Researchers (K.A. Corak & D.P. Wharton; 10 pp; No. 49)
 Academic and Librarian Faculty: Birds of a Different Feather in Compensation Policy? (M.E. Zeglen & E.J. Schmidt; 10 pp; No. 50)
 Setting Up a Key Success Index Report: A How-To Manual (M.M. Sapp; 8 pp; No. 51)

The AIR Professional File—1978-2012

- Involving Faculty in the Assessment of General Education: A Case Study (D.G. Underwood & R.H. Nowaczyk; 6 pp; No. 52)
- Using a Total Quality Management Team to Improve Student Information Publications (J.L. Frost & G.L. Beach; 8 pp; No. 53)
- Evaluating the College Mission through Assessing Institutional Outcomes (C.J. Myers & P.J. Silvers; 9 pp; No. 54)
- Community College Students' Persistence and Goal Attainment: A Five-year Longitudinal Study (K.A. Conklin; 9 pp; No. 55)
- What Does an Academic Department Chairperson Need to Know Anyway? (M.K. Kinnick; 11 pp; No. 56)
- Cost of Living and Taxation Adjustments in Salary Comparisons (M.E. Zeglen & G. Tesfagiorgis; 14 pp; No. 57)
- The Virtual Office: An Organizational Paradigm for Institutional Research in the 90's (R. Matross; 8 pp; No. 58)
- Student Satisfaction Surveys: Measurement and Utilization Issues (L. Sanders & S. Chan; 9 pp; No. 59)
- The Error Of Our Ways; Using TQM Tactics to Combat Institutional Issues Research Bloopers (M.E. Zeglin; 18 pp; No. 60)
- How Enrollment Ends; Analyzing the Correlates of Student Graduation, Transfer, and Dropout with a Competing Risks Model (S.L. Ronco; 14 pp; No. 61)
- Setting a Census Date to Optimize Enrollment, Retention, and Tuition Revenue Projects (V. Borden, K. Burton, S. Keucher, F. Vossburg-Conaway; 12 pp; No. 62)
- Alternative Methods For Validating Admissions and Course Placement Criteria (J. Noble & R. Sawyer; 12 pp; No. 63)
- Admissions Standards for Undergraduate Transfer Students: A Policy Analysis (J. Saupe & S. Long; 12 pp; No. 64)
- IR for IR—Indispensable Resources for Institutional Researchers: An Analysis of AIR Publications Topics Since 1974 (J. Volkwein & V. Volkwein; 12 pp; No. 65)
- Progress Made on a Plan to Integrate Planning, Budgeting, Assessment and Quality Principles to Achieve Institutional Improvement (S. Griffith, S. Day, J. Scott, R. Smallwood; 12 pp; No. 66)
- The Local Economic Impact of Higher Education: An Overview of Methods and Practice (K. Stokes & P. Coomes; 16 pp; No. 67)
- Developmental Education Outcomes at Minnesota Community Colleges (C. Schoenecker, J. Evens & L. Bollman; 16 pp; No. 68)
- Studying Faculty Flows Using an Interactive Spreadsheet Model (W. Kelly; 16 pp; No. 69)
- Using the National Datasets for Faculty Studies (J. Milam; 20 pp; No. 70)
- Tracking Institutional leavers: An Application (S. DesJardins, H. Pontiff; 14 pp; No. 71)
- Predicting Freshman Success Based on High School Record and Other Measures (D. Eno, G. W. McLaughlin, P. Sheldon & P. Brozovsky; 12 pp; No. 72)
- A New Focus for Institutional Researchers: Developing and Using a Student Decision Support System (J. Frost, M. Wang & M. Dalrymple; 12 pp; No. 73)
- The Role of Academic Process in Student Achievement: An Application of Structural Equations Modeling and Cluster Analysis to Community College Longitudinal Data1 (K. Boughan; 21 pp; No. 74)
- A Collaborative Role for Industry Assessing Student Learning (F. McMartin; 12 pp; No. 75)
- Efficiency and Effectiveness in Graduate Education: A Case Analysis (M. Kehrhahn, N.L. Travers & B.G. Sheckley; No. 76)
- ABCs of Higher Education-Getting Back to the Basics: An Activity-Based Costing Approach to Planning and Financial Decision Making (K. S. Cox, L. G. Smith & R.G. Downey; 12 pp; No. 77)
- Using Predictive Modeling to Target Student Recruitment: Theory and Practice (E. Thomas, G. Reznik & W. Dawes; 12 pp; No. 78)
- Assessing the Impact of Curricular and Instructional Reform - A Model for Examining Gateway Courses1 (S.J. Andrade; 16 pp; No. 79)
- Surviving and Benefitting from an Institutional Research Program Review (W.E. Knight; 7 pp; No. 80)
- A Comment on Interpreting Odds-Ratios when Logistic Regression Coefficients are Negative (S.L. DesJardins; 7 pp; No. 81)
- Including Transfer-Out Behavior in Retention Models: Using NSC EnrollmentSearch Data (S.R. Porter; 16 pp; No. 82)
- Assessing the Performance of Public Research Universities Using NSF/NCES Data and Data Envelopment Analysis Technique (H. Zheng & A. Stewart; 24 pp; No. 83)
- Finding the 'Start Line' with an Institutional Effectiveness Inventory (S. Ronco & S. Brown; 12 pp; No. 84)
- Toward a Comprehensive Model of Influences Upon Time to Bachelor's Degree Attainment (W. Knight; 18 pp; No. 85)
- Using Logistic Regression to Guide Enrollment Management at a Public Regional University (D. Berge & D. Hendel; 14 pp; No. 86)
- A Micro Economic Model to Assess the Economic Impact of Universities: A Case Example (R. Parsons & A. Griffiths; 24 pp; No. 87)
- Methodology for Developing an Institutional Data Warehouse (D. Wierschem, R. McBroom & J. McMillen; 12 pp; No. 88)
- The Role of Institutional Research in Space Planning (C.E. Watt, B.A. Johnston. R.E. Chrestman & T.B. Higerd; 10 pp; No. 89)
- What Works Best? Collecting Alumni Data with Multiple Technologies (S. R. Porter & P.D. Umbach; 10 pp; No. 90)Caveat Emptor: Is There a Relationship between Part-Time Faculty Utilization and Student Learning Outcomes and Retention? (T. Schibik & C. Harrington; 10 pp; No. 91)
- Ridge Regression as an Alternative to Ordinary Least Squares: Improving Prediction Accuracy and the Interpretation of Beta Weights (D. A. Walker; 12 pp; No. 92)
- Cross-Validation of Persistence Models for Incoming Freshmen (M. T. Harmston; 14 pp; No. 93)
- Tracking Community College Transfers Using National Student Clearinghouse Data (R.M. Romano and M. Wisniewski; 14 pp; No. 94)
- Assessing Students' Perceptions of Campus Community: A Focus Group Approach (D.X. Cheng; 11 pp; No. 95)
- Expanding Students' Voice in Assessment through Senior Survey Research (A.M. Delaney; 20 pp; No. 96)

The AIR Professional File—1978-2012

- Making Measurement Meaningful (J. Carpenter-Hubin & E.E. Hornsby, 14 pp; No. 97)
- Strategies and Tools Used to Collect and Report Strategic Plan Data (J. Blankert, C. Lucas & J. Frost; 14 pp; No. 98)
- Factors Related to Persistence of Freshmen, Freshman Transfers, and Nonfreshman Transfer Students (Y. Perkhounkova, J. Noble & G. McLaughlin; 12 pp; No. 99)
- Does it Matter Who's in the Classroom? Effect of Instructor Type on Student Retention, Achievement and Satisfaction (S. Ronco & J. Cahill; 16 pp; No. 100)
- Weighting Omissions and Best Practices When Using Large-Scale Data in Educational Research (D.L. Hahs-Vaughn; 12 pp; No. 101)
- Essential Steps for Web Surveys: A Guide to Designing, Administering and Utilizing Web Surveys for University Decision-Making (R. Cheskis-Gold, E. Shepard-Rabadam, R. Loescher & B. Carroll; 16 pp; No. 102)
- Using a Market Ratio Factor in Faculty Salary Equity Studies (A.L. Luna; 16 pp; No. 103)
- Voices from Around the World: International Undergraduate Student Experiences (D.G. Terkla, J. Etish-Andrews & H.S. Rosco; 15 pp; No. 104)
- Program Review: A tool for Continuous Improvement of Academic Programs (G.W. Pitter; 12 pp; No. 105)
- Assessing the Impact of Differential Operationalization of Rurality on Studies of Educational Performance and Attainment: A Cautionary Example (A. L. Caison & B. A. Baker; 16pp; No. 106)
- The Relationship Between Electronic Portfolio Participation and Student Success (W. E. Knight, M. D. Hakel & M. Gromko; 16pp; No. 107)
- How Institutional Research Can Create and Synthesize Retention and Attrition Information (A. M. Williford & J. Y. Wadley; 24pp; No. 108)
- Improving Institutional Effectiveness Through Programmatic Assessment (D. Brown; 16pp; No. 109)
- Using the IPEDS Peer Analysis System in Peer Group Selection (J. Xu; 16pp; No. 110)
- Improving the Reporting of Student Satisfaction Surveys Through Factor Analysis (J. Goho & A Blackman; 16pp; No. 111)
- Perceptions of Graduate Student Learning via a Program Exit Survey (R. Germaine & H. Kornuta; 16pp; No. 112)
- A Ten-Step Process for Creating Outcomes Assessment Measures for an Undergraduate Management Program: A Faculty-Driven Process (S. Carter; 18pp; No. 113)
- Institutional Versus Academic Discipline Measures of Student Experience: A Matter of Relative Validity (S. Chatman; 20pp; No. 114)
- In Their Own Words: Effectiveness in Institutional Research (W. E. Knight; 20pp; No. 115)
- Alienation and First-Year Student Retention (R. Liu; 18 pp; No. 116)
- Estimating the Economic Impact of Higher Education: A Case Study of the Five Colleges in Berks County, Pennsylvania (M. D'Allegro & L. A. Paff; 17 pp; No. 117)
- Improving the Way Higher Education Institutions Study Themselves: Use and Impact of Academic Improvement Systems (K. K. Bender, J. L. Jonson & T. J. Siller; 23pp; No. 118)
- Top-Down Versus Bottom-Up Paradigms of Undergraduate Business School Assurance of Learning Techniques (R. Priluck & J. Wisenblit; 15pp; No. 119)
- The Rise of Institutional Effectiveness: IR Competitor, Customer, Collaborator, or Replacement? (C. Leimer; 17pp; No. 120)
- Keeping Confidence In Data Over Time: Testing The Tenor Of Results From Repeat Administrations Of A Question Inventory (E. Boylan; 14pp; No. 121)
- First, Get Their Attention: Getting Your Results Used (C. Leimer; 17pp; No. 122)
- Institutional Dashboards: Navigational Tool for Colleges and Universities (D. G. Terkla, J. Sharkness, M. Cohen, H. S. Roscoe & M. Wiseman; 22pp; No. 123)
- Tuition Revenues and Enrollment Demand: The Case of Southern Utah University (R. K. Craft, J. G. Baker, B. E. Myers; 18pp; No. 124)
- Disaggregating the Truth: A Re-Analysis of the Costs and Benefits of Michigan's Public Universities (N. J. Daun-Barnett; 20pp; No. 125)
- Integrating the Functions of Institutional Research, Institutional Effectiveness, and Information Management (J. T. Posey; G. W. Pitter; 32pp; No. 126)
- Conducting Focus Groups with College Students: Strategies to Ensure Success (F. D. Billups; 16pp; No. 127)



**Association for
Institutional Research**



**Association for
Institutional Research**

The AIR *Professional File* is intended as a presentation of papers which synthesize and interpret issues, operations, and research of interest in the field of institutional research. Authors are responsible for material presented. The AIR *Professional File* is published by the Association for Institutional Research.

MANAGING EDITOR:

Dr. Randy L. Swing

Executive Director

Association for Institutional Research

1435 E. Piedmont Drive

Suite 211

Tallahassee, FL 32308

Phone: 850-385-4155

Fax: 850-385-5180

air@airweb.org

Dr. Gerald McLaughlin provided editorial oversight for the production of this manuscript.

The AIR *Professional File* Editorial Board provided peer review services and editorial assistance at the time this paper was accepted for publication.

Dr. Trudy H. Bers

Senior Director of
Research, Curriculum and Planning
Oakton Community College
Des Plaines, IL

Dr. Stephen L. Chambers

Director of Institutional Research
and Assessment
Coconino Community College
Flagstaff, AZ

Dr. Anne Marie Delaney

Director of
Institutional Research
Babson College
Babson Park, MA

Mr. Jacob P. Gross

Associate Director for Research
Indiana University/Project on Academic Success
1900 E 10th Ste 630
Bloomington, IN

Dr. Ronald L. Huesman Jr.

Assistant Director,
Office of Institutional Research
University of Minnesota
Minneapolis, MN

Dr. David Jamieson-Drake

Director of
Institutional Research
Duke University
Durham, NC

Dr. Julie P. Noble,

Principal Research Associate
ACT, Inc.
Iowa City, Iowa

Dr. Gita W. Pitter

Associate VP, Institutional Effectiveness
Florida A&M University
Tallahassee, FL 32307

Dr. James T. Posey

Director of Institutional Research & Planning
University of Washington
Tacoma, WA 98402

Dr. Harlan M. Schweer

Director, Office of Institutional Research
College of DuPage
Glen Ellyn, IL

Dr. Jeffrey A. Seybert

Director of
Institutional Research
Johnson County Community College
Overland Park, KS

Dr. Bruce Szelest

Associate Director of
Institutional Research
SUNY-Albany
Albany, NY

Mr. Daniel Jones-White

Analyst
University of Minnesota
Minneapolis, MN